



COPY OF PAPERS  
ORIGINALLY FILED

Remarks

RECEIVED

NOV 01 2002

TC 1700

This Preliminary Amendment is submitted in response to the September 12, 2002 Advisory Action. Claims 2, 33 and 58 have been amended in response to several additional helpful suggestions in the Advisory Action. The amendments above assume entry of the Amendment previously submitted on August 19, 2002 and received in the Patent Office on August 26, 2002 into the Official File.

Claims 2, 33 and 58 have been amended to include the concept from Claim 1 with respect to the continuous nature of the method and that the apparatus of the invention is adapted to apply paste to the substrate in a continuous manner. Reference to Fig. 1, for example, shows what is meant by continuous in the context of the invention. Fig. 1 shows a plurality of outlet holes which continuously apply paste between selected barrier ribs. Essentially, the paste applicator moves with respect to the substrate along channels formed between barrier ribs and continuously applies paste in those channels, substantially from one end to the other. It is possible, in accordance with the invention, that only selected channels have paste continuously applied to them, followed by continuous application of paste to other selected channels. Alternatively, paste may continuously be applied to all of the channels, substantially simultaneously.

As noted in the prior Amendment, both the originally filed Specification in this Application, as well as the Applicants' earliest priority Application, JP 8/336713, filed December 17, 1996, fully support such continuous application. In that regard, we again invite the Examiner's attention to page 6 of the English translation of JP '713, in the third full paragraph, which provides that the paste may be applied continuously.

We respectfully submit that the discontinuous process of Shinoda fails to teach or suggest the continuous process of the Application as now reflected in all of the independent claims (1, 2, 33 and 58). We, therefore, respectfully submit that this clear difference over the prior art is set forth in a manner fully commensurate with the scope of the claims. Withdrawal of all rejections based

on Shinoda is accordingly respectfully requested.

We note with appreciation the Examiner's helpful comments concerning the language previously added to the independent claims with respect to the paste applicator having 640 to 2,000 outlet holes. We respectfully submit that this language is fully supported in originally filed Specification, as well as the JP '713 priority application. The originally filed Specification provides for a broad range of outlet holes between 1 and 6,000. This may be found at page 38, line 16. That range is narrowed to the number of outlet holes for one of red, blue or green phosphor paste on the upper end in the independent claims to have an upper limit of 2,000, as is shown in originally filed Claims 5 and 6, as well as page 38, line 21.

The lower limit of 640 is also fully supported. It is within the original 1 to 6,000 range and is exactly supported in Example 4 on page 71, line 10. There is no reference in the originally filed Specification to a range of "640 to 2,000", such a range need not specifically be set forth so long as the range itself is fully supported. The *Wertheim* and *Ralston Purina* decisions, discussed in detail in the previous Amendment, are exactly on point and compel acceptance of the claimed range of 640 to 2,000 outlet holes.

The Applicants note with appreciation the Examiner's additional helpful comments concerning the number of holes and that there has been no showing of unexpected results commensurate in scope with that number of holes. We respectfully submit that no showing of unexpected results is necessary. However, we invite the Examiner's attention to page 2, line 12 to page 3, line 8 and page 78, lines 2 - 11 of the Specification wherein the effects of this invention were totally unexpected since continuous paste application was not previously suggested by the prior art. It simply had not been expected that a paste applicator having 640 to 2000 outlet holes for one of red, green or blue phosphor paste would work effectively and precisely over a long economical life.

In particular, Shinoda is simply completely devoid of teachings or suggestions to those of ordinary skill in the art that can remotely support an obviousness rejection. Fig. 22A of Shinoda demonstrates this utter failure. First, there is no true paste applicator, inasmuch as Shinoda utilizes the crude technique of causing a square squeezer 82 to travel in a direction M1 to squeeze phosphor paste 28a through slots in a screen applied to tops of a plurality of barrier ribs. The screen does not move with respect to the barrier ribs, as does the paste applicator of the invention and the square squeezer 82, which applies force to the phosphor paste, thereby causing it to ooze through the slots, is also not an applicator as one of ordinary skill the art would understand it. Clearly, the square squeezer has no outlet holes. The screen is also not an applicator in the sense that simply applying the screen to the tops of the barrier ribs and placing phosphor paste on it does not provide for any manner of applying the paste into the channels located between the barrier ribs.

In any event, there are utterly no teachings or suggestions as to the number of slots and there are no teachings or suggestions to one of ordinary skill in the art how or whether the number of slots should or could be varied when shifting from the totally different manner of applying paste to the channels as disclosed in Shinoda from that of the invention.

It is essential in forming a rejection based on obviousness that the prior art reference itself provide teachings or suggestions to those of ordinary skill in the art to make modifications to the disclosure of the reference that would result in the claim subject matter. There is not one such word in Shinoda along these lines and not one word that would lead one of ordinary skill in the art to utilize a paste applicator having 640 to 2,000 outlet holes as claimed herein. Accordingly, there is utterly no need to provide a demonstration of unexpected results in the total absence of any teachings or suggestions in the prior art document that would motivate one of ordinary skill in the art to make modifications resulting in the claimed 640 to 2,000 outlet holes. Mere speculation, all taken in hindsight, as to the utilization of the claimed number of outlet holes is insufficient upon which to base an obviousness rejection.

In light of the foregoing, we respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury  
Reg. No. 31,750  
Attorney for Applicants

TDC:lh  
(215) 563-1810

OCT 18 2002

COPY OF PAPERS  
ORIGINALLY FILED

In the Claims (Clean Copy)

F1 2. (Five Times Amended) A method for producing a plasma display, comprising the steps of continuously coating a substrate having a plurality of adjacent barrier ribs, with three phosphor pastes respectively containing a phosphor powder emitting light of red, green or blue, as stripes in spaces between said respectively adjacent barrier ribs, from a paste applicator having 640 to 2000 outlet holes for one of red, green or blue phosphor paste, and heating to form a phosphor layer.

F2 33. (Five Times Amended) An apparatus for producing a plasma display, comprising a table for fixing a substrate with a plurality of barrier ribs formed on the substrate surface, a paste applicator having 640 to 2000 outlet holes to face the barrier ribs of the substrate, wherein a phosphor paste supply is operatively connected to the paste applicator to continuously supply paste to the substrate, and a moving actuator for three-dimensionally moving the table and said paste applicator relative to each other.

58. (Five Times Amended) An apparatus for producing a plasma display, comprising three coating devices provided in series to deliver three phosphor pastes, said coating devices each being equipped with a table for fixing a substrate having barrier ribs, a paste applicator with 640 to 2000 outlet holes arranged to face the barrier ribs of the substrate, a supply means for continuously supplying phosphor pastes to the paste applicator, and wherein a moving means for three-dimensionally moving the table and the paste applicator relative to each other, is provided.

RECEIVED

NOV 01 2002

TC 1700